

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: TBD

Region: Fayetteville Regional Office
County: Cumberland
NC Facility ID: 2600094
Inspector's Name: Joshua L. Harris
Date of Last Inspection: 08/10/2016
Compliance Code: 3 / Compliance - inspection

Facility Data Applicant (Facility's Name): Public Works Commission Butler-Warner Generation Plant Facility Address: Public Works Commission Butler-Warner Generation Plant 2274 Custer Avenue Fayetteville, NC 28312 SIC: 4931 / Elec & Other Services Combined NAICS: 221112 / Fossil Fuel Electric Power Generation Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V				Permit Applicability (this application only) SIP: 02D: .0516, .0521, .0524 NSPS: GG NESHAP: ZZZZ PSD: n/a PSD Avoidance: n/a NC Toxics: n/a 112(r): n/a Other: CSAPR					
Contact Data				Application Data					
Facility Contact William May Power Plant Manager (910) 223-4814 PO Box 1089 Fayetteville, NC 28302	Authorized Contact William May Power Plant Manager (910) 223-4814 PO Box 1089 Fayetteville, NC 28302	Technical Contact William May Power Plant Manager (910) 223-4814 PO Box 1089 Fayetteville, NC 28302	Application Number: 2600094.17A Date Received: 12/23/2016 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03029/T18 Existing Permit Issue Date: 03/28/2016 Existing Permit Expiration Date: 10/31/2017						
Total Actual emissions in TONS/YEAR:									
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP		
2015	4.24	53.75	0.1400	7.20	1.86	0.2094	0.1079 [Manganese Unlisted Compounds]		
2014	3.92	39.92	0.0900	4.90	1.41	0.1560	0.0872 [Manganese & compounds]		
2013	0.2800	3.88	0.0500	2.48	0.1100	0.0286	0.0144 [Formaldehyde]		
2012	0.7500	27.99	0.4500	28.51	1.43	0.2208	0.1524 [Formaldehyde]		
2011	0.9600	35.70	0.5800	39.22	1.86	0.2916	0.2014 [Formaldehyde]		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> Review Engineer: Russell Braswell Review Engineer's Signature: _____ Date: _____ </td> <td style="width: 50%; vertical-align: top;"> Comments / Recommendations: Issue 03029/T19 Permit Issue Date: TBD Permit Expiration Date: TBD </td> </tr> </table>								Review Engineer: Russell Braswell Review Engineer's Signature: _____ Date: _____	Comments / Recommendations: Issue 03029/T19 Permit Issue Date: TBD Permit Expiration Date: TBD
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1. Purpose of Application:

Public Works Commission Butler-Warner Generation Plant (PWC) currently operates a facility in Cumberland County under Title V air quality permit 03029T18. The current permit has an expiration date of October 31, 2017. PWC has submitted this permit application in order to renew the permit. Because the renewal application was received at least nine months before the expiration date, the current permit will remain in effect, regardless of expiration date, until this application process is completed.

2. Facility Description:

This facility provides electric generation for Duke Energy. The facility generates electricity from eight gas turbines and one steam turbine. Heat for the steam turbine comes entirely from the exhaust of the gas turbines.

3. History/Background Since the Previous Permit Renewal:

- November 9, 2012 Permit T17 issued. This action renewed the permit and also satisfied a 2nd-step requirement started by the T16 permit.
- March 28, 2016 Permit T18 issued. This was a reopen-for-cause that replaced CAIR with CSAPR.

4. Application Chronology:

- December 23, 2016 Application .17A received.
- February 10, 2017 An initial draft of the permit and review were sent to DAQ staff (Tom Anderson, Lori Phillips, Samir Parekh, Josh Harris, Greg Reeves) and PWC staff (William Ace May). See Attachment 2 for a summary of comments received.
- XXXX Public / EPA notice
- XXXX Permit issued.

5. Permit Modifications/Changes and TVEE Discussion:

The list of changes to the permit can be found in Attachment 1.

6. Regulatory Review:

This facility is subject to the following regulations, in addition to the requirements in the General Conditions:

- 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .0524 "New Source Performance Standards" (40 CFR Part 60, Subpart GG)
- National Emission Standards for Hazardous Air Pollutants (40 CFR Part 63, Subpart ZZZZ)
- Cross State Air Pollution Rule (40 CFR Part 97, Subparts AAAAA, BBBBB, and CCCCC)

An extensive review for each applicable regulation is not included in this document, as the facility's status with respect to these regulations has not changed. The permit will be updated to reflect the most current stipulations for all applicable regulations. The removal of 02D .0530(u) is discussed below:

- 02D .0530(u) "Use of Projected Actual Emissions"

This condition was added to the permit with the T16 permit revision¹ when PWC made a modification that increased potential CO emissions from the facility. In order to demonstrate that actual CO emissions from the modification would not trigger a PSD review, PWC kept records of CO emissions for five years following the modification. The recordkeeping began in CY2008 and ended in CY2013. All records indicated CO emissions below what would have required a PSD review.

The recordkeeping requirement lasted for five years, and ended in CY2013. No further recordkeeping of CO emissions is required, so the permit stipulation has been removed from the permit.

- "Applicability of General Conditions"

The permit contains stipulations that allow PWC to operate the non-NSPS gas turbines without the water injection systems. This was added in the T11 permit², with the following discussion:

"These CTs are equipped with water injection to reduce NOx emissions, however there are no NOx standards that apply to these sources, with the exception of the NOx SIP Call requirements that go into effect in 2004 (See 15A NCAC 2D .1400)³. General condition F ("Circumvention") requires the concurrent operation of any control device when the emission source is operating. However, in this case because there are no applicable NOx emission standards it was decided not to require the facility to operate these controls at all times. The applicant has in the past, and indicated that they will in the future, operate the controls, however it was agreed that to require the controls for these sources without an applicable standard would result in a disincentive to install optional controls. The permit terms will be amended to state that General Condition F "Circumvention" does not apply to the seven non-NSPS combustions turbines."

7. NSPS, MACT/GACT, PSD/NSR, 112(r), RACT, CAM:

a. New Source Performance Standards (NSPS)

1. Subpart GG "Stationary Gas Turbines"

According to 40 CFR 60.330(b), this rule applies to all stationary combustion turbines constructed after October 3, 1977. Of all the turbines at this facility, only GT-8 is subject to this rule.

The rule has emission limits for NOx and SO2. Compliance with the NOx limit is demonstrated using water injection and monitoring systems to record the water-to-fuel ratio. Compliance with

1 Mike Gordon, March 3, 2008

2 John Evans, June 4, 2003

3 There are no longer any rules under 02D .1400 that apply to this facility.

the SO₂ limits is demonstrated using fuel monitoring. The facility must keep records of monitoring activities and report them twice per year.

This permit renewal will not change PWC's requirements under the rule. Continued compliance is expected.

2. *Subpart IIII "Stationary Compression Ignition Internal Combustion Engines"*

According to 40 CFR 60.4200(a)(2), this rule applies to engines that were manufactured after April 1, 2006 or were modified after July 11, 2005.

All of the engines at this facility were manufactured before the applicability date and have not been modified after the applicability date. Therefore, NSPS Subpart IIII does not apply.

3. *Subpart KKKK "Stationary Combustion Turbines"*

According to 40 CFR 60.4300, this rule applies to stationary combustion turbines constructed or modified after February 18, 2005. All of the turbines at this facility were constructed before this date, and none of the turbines have been modified after this date. Therefore, NSPS Subpart KKKK does not apply.

b. Maximum/Generally Available Control Technology (MACT/GACT)

This facility is considered an Area Source of HAP emissions. Furthermore, this facility is not avoiding Major Source status for HAP emissions.

1. *Subpart YYYY "Stationary Combustion Turbines"*

According to 40 CFR 63.6085(a), this rule applies to gas turbines at HAP-Major sources. This facility is not HAP-Major, therefore MACT Subpart YYYY does not apply.

2. *Subpart ZZZZ "Stationary Reciprocating Internal Combustion Engines"*

This rule applies to all stationary internal combustion engines. The requirements of the rule vary based on the size of the engine, major/area source status, and other factors. All of the engines at this facility are "existing" and "emergency-use".

For these types of engines, the only requirements are to perform regular maintenance and operate with good air pollution control practices. The engines can only be operated for maintenance and emergency scenarios.

This rule only applies to sources on the "Insignificant Activities" list. Therefore, the permit will not include a specific stipulation for this rule.

c. Prevention of Significant Deterioration (PSD)

This facility has not triggered a PSD review. Furthermore, this facility is not avoiding triggering a PSD review.

In the past, PWC has avoided triggering a PSD review. Recordkeeping was required to demonstrate that actual emissions did not warrant a PSD review, but this requirement is no longer in effect. See Section 6 for details.

d. Section 112(r) of the Federal Clean Air Act

The facility does not appear to store any 112(r)-subject materials above their respective thresholds. Therefore, the facility does not have any increased requirements under Section 112(r) of the Clean Air Act.

e. Reasonably Available Control Technology (RACT)

The facility is not located in an area of ozone nonattainment, therefore RACT does not apply.

f. Compliance Assurance Monitoring (CAM)

CAM applies to a control device if the following criteria are met:

1. The unit being controlled is subject to a non-exempt emission standard (as defined by 2D .0614(b)(1)),
2. The control device is being used to comply with the emission standard, and
3. The unit being controlled has potential emissions of the pollutant subject to the emission standard of greater than major source thresholds.

All of the turbines at this facility are equipped with water injection systems. These systems are used to control NO_x emissions. Technically, GT-1 through 7 do not have any applicable NO_x emission standards, therefore CAM does not apply to these units.

GT-8 is subject to NSPS Subpart GG, which is a NO_x standard. However, this rule requires that PWC operate a continuous monitor for the water-to-fuel ratio, which is directly correlated to compliance with the NO_x standard. This is considered a continuous compliance determination method per 15A NCAC 02D .0614(b)(1)(F). Therefore, CAM does not apply to GT-8.

8. Toxic Air Pollutants

This facility has not been reviewed for TAP emission rates. Furthermore, this renewal will not trigger a review of TAP rates.

9. Cross State Air Pollution Rule [CSAPR]

This facility is subject to CSAPR, which limits NO_x and SO₂ on an annual basis. Although the Title V permit contains a reference to CSAPR, the limits and compliance methods for this rule are set and enforced entirely by the US EPA, not NC DAQ.

10. Facility Emissions Review

For a historical review of emissions from this facility, see the summary table on the first page of this review.

This permit renewal is not expected to change potential emissions from this facility.

11. Compliance Status

- a. Notices of Violation/Recommendation for Enforcement since the previous renewal

None.

- b. Inspection status

The facility was most recently inspected on August 10, 2016 by Josh Harris. PWC appeared to be in compliance with the Title V permit at the time of that inspection.

12. Other Regulatory Concerns

A PE seal was not required for this permit renewal.

A zoning consistency form was not required for this permit renewal.

13. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above.

14. Recommendations

Issue permit 03029T19.

Change List

Pages*	Section*	Description of Changes
Throughout	Throughout	<ul style="list-style-type: none">• Updated application/permit numbers.• Updated dates.• Fixed formatting errors.• Changed "assure" to "ensure" per DAQ policy.
	2.2 (former)	<ul style="list-style-type: none">• Removed Section 2.2 because it is now empty.• Removed reference to 02D .0530(u) because the five year reporting requirement has been completed.
	2.4 (former)	<ul style="list-style-type: none">• Removed Section 2.4. because it is now empty• Removed permit shield for CAIR and 02D .2400 because these rules have officially expired.

Comments on Initial Draft

- Josh Harris, by email on February 13, 2017

Josh pointed out that the authorized official on the permit needs to be updated to William May.

Response: Fixed.

- Lori Phillips, by email on February 13, 2017

Lori corrected "assure" to "ensure" per DAQ policy.

Response: Fixed.

DRAFT